

**Appendix B:**

**Written Description for each claim in the Applicant's Specification**

<b>Claims Added</b>	<b>Disclosure in Applicant's Present Specification</b>
141. A method of simultaneously conducting multiple chemical reactions in a reaction assembly that comprises	<p>"The present inventions relate to the fabrication and placement of materials at known locations on a substrate." P. 1, ll. 14-15.</p> <p>"In particular, the method comprises the steps of first forming a plurality of probe arrays on a substrate and separating the substrate into a plurality of chips. Typically, each chip contains at least one probe array. A chip is then mated to a package having a reaction chamber with fluid inlets. When mated, the probe array is in fluid communication with the reaction chamber." P. 3, ll. 2-6.</p> <p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p>
a microtiter plate of wells	<p>"...the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format." P. 27, ll. 11-12.</p>
containing test samples and an array of sets of chemical reactants comprising the steps of:	<p>"Methods and devices for packaging a substrate having an array of probes fabricated on its surface are disclosed." P. 2, ll. 18-19.</p> <p>"A target is a molecule that has an affinity for a given probe and is sometimes referred to as a receptor." P. 6, ll. 4-5.</p> <p>"A probe is a surface-immobilized molecule that is recognized by a particular target and is sometimes referred to as a ligand." P. 5, ll. 31-32.</p>
assembling the array of sets of chemical reactants to the microtiter plate of test samples such that the array covers open ends in the test sample wells of the microtiter plate to form a plurality of closed cells,	<p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p>
each closed cell comprising a	<p>"In operation, a fluid is placed into container 2810. The fluid, for</p>



Claims Added	Disclosure in Applicant's Present Specification
set of chemical reactants and a respective test sample;	<p>example, may contain targets that are to be hybridized with probes on the chip." P. 28, ll. 1-2.</p> <p>"Inlets 2750 and 2751 are provided and communicate with cavity 2710. Selected fluids are circulated through the cavity via inlets 2750 and 2751. To seal the fluids in the cavity, a septum, plug, or other seal may be employed." P. 27, ll. 6-8.</p> <p>"Upon completion, the chip package will have a variety of uses. For example, the chip package will be useful in sequencing genetic material by hybridization. In sequencing by hybridization, the chip package is mounted on a hybridization station where it is connected to a fluid delivery system. Such system is connected to the package by inserting needles into the ports and puncturing the septums therein. In this manner, various fluids are introduced into the cavity for contacting the probes during the hybridization process." P. 22, ll. 19-24.</p>
sealing the microtiter plate to the array to create one or more of a gas tight, a liquid tight, and a fluid tight seal; and	<p>"Optionally, a gasket or a seal 2070 is located between the ledge and chip to ensure a tight seal around cavity 310." P. 24, ll. 30-31.</p> <p>"In some embodiments, a gasket or seal 2270 is placed at the bottom of the notch to ensure a tight seal when the chip is attached. Once the chip is located at the notch, a V-shaped wedge 2260 is inserted into channel 2250. The wedge forces the body to press against chip's edges and seal 2260, thus mating the chip to the package." P. 25, ll. 13-17.</p> <p>"FIG. 23 shows an alternative embodiment of package that employs check valves to seal the inlets. As shown, depressions 2305 and 2315 communicate with cavity 310 through inlets 350 and 360... To introduce a fluid into the cavity, a needle is inserted into the check valve. When the needle is removed, the check valve reseals itself to prevent leakage of the fluid." P.25, ll. 22-27</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P.25, line 28 to P.26, line 2.</p> <p>"FIG. 26a illustrates a package utilizing sliding seals for retaining fluids within the cavity. The seals are positioned in slots 2610 that are located above the inlets... The inlet is sealed or unsealed by positioning the seal appropriately along the slot. Alternatively, spring loaded balls, rotary ball valves, plug valves, or other fluid retention techniques may be employed."</p>



Claims Added	Disclosure in Applicant's Present Specification
<p>mechanically agitating the sealed reaction assembly to contact the test samples with the chemical reactants in each closed cell simultaneously.</p>	<p>P.26, ll. 9-17.</p> <p>"Optionally, the fluid delivery system includes an agitator to improve mixing the cavity,..." P. 23, l. 4.</p> <p>"Fig. 29 illustrates an alternative embodiment of the agitation system. System 2900 includes a vortexer 2910 on which the chip package 300 is mounted." P. 28, ll. 27-28.</p> <p>"...the vortexer is activated to vibrate the chip package, similar to a paint mixer. In some embodiments, the vortexer may vibrate the package at about 3000 cycles per minutes. The motion mixes the targets in the fluid, shortening the incubation period." P. 29, ll. 13-15.</p> <p>"The bubbles agitate the fluid, increasing the hybridization rate between the targets and complementary probe sequences." P. 10, ll. 20-21.</p>
<p>142. The method of claim 141, wherein in the step of assembling, the array is made of a flexible material,</p>	<p>"The wafer 100 may be composed of a wide range of material, either biological, nonbiological, organic, inorganic, or a combination of any of these, existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, slides, etc." P. 6, ll. 28-31.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO<sub>2</sub>, SiN<sub>4</sub>, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P.7, ll. 5-8.</p> <p>"Surfaces on the solid wafer will usually, though not always, be composed of the same material as the wafer. Thus, the surface may be composed of any of a wide variety of materials, for example, polymers, plastics, resins, polysaccharides, silica or silica-based materials, carbon, metals, inorganic glasses, membranes, or any of the above-listed wafer materials." P.7, ll. 12-16.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
<p>and wherein in the step of sealing, the array is placed against the microtiter plate using one or more of mechanical clamps, radiation, heat, vacuum and</p>	<p>"In some embodiments, clamp 2010 is acoustically welded to the body." P.25, line 1.</p> <p>"Alternatively, screws, clips, adhesives or other attachment techniques may be used to mate clamp 2010 to the package." P. 25, ll. 2-4.</p>



Claims Added	Disclosure in Applicant's Present Specification
<p>an adhesive to seal the reaction assembly.</p>	<p>"According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P.19, ll. 28-29.</p> <p>"Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.</p> <p>"Heat staking includes applying heat and force at side 211 of ridge, thus forcing ridge tightly against or around chip 120." P. 25, ll. 8-10.</p> <p>"Other techniques such as insert molding, wave soldering, surface diffusion, laser welding, shrink wrap, o-ring seal, surface etching, or heat staking from the top may also be employed." P. 25, ll. 18-20.</p> <p>The substrate and the body serve to seal the cavity except for an inlet port and an outlet port. The body and the substrate may be mated for sealing in some embodiments with one or more gaskets. According to a preferred embodiment, the body is provided with two concentric gaskets and the intervening space is held at vacuum to ensure mating of the substrate to the gaskets. U.S. Patent No. 5,143,854, col. 16, ll. 46-52 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P. 25, line 28 to P. 26, line 2.</p>
<p>143. The method of claim 141, wherein in the step of assembling, the array is made of an optically transparent flexible film</p>	<p>"In a preferred embodiment, the wafer is flat galss or single-crystal silicon." P. 7, ll. 10-11.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO2, SiN4, modified silicon, or any one of a wide variety of gels or polymers such as poly(tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P. 7, ll. 5-8.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
<p>having an adhesive surface</p>	<p>"A substrate having an array of probes is attached to the cavity using, for</p>



Claims Added	Disclosure in Applicant's Present Specification
that surrounds the sets of chemical reactants, the adhesive surface being contacted with the microtiter plate.	<p>example, an adhesive." P. 2, ll. 20-21.</p> <p>"This configuration permits the adhesive to be dispensed onto the trough and provides adequate surface area for the adhesive to attach chip 120 to the package." P. 12, ll. 9-11.</p> <p>"Ledge 1810, which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.</p> <p>"Preferably, the ledge is sufficiently large to accommodate an adhesive 1920 such as an adhesive film, adhesive layer, tape, or any other adhesive layer." P. 24, ll. 23-24.</p>
144. The method of claim 141, wherein in the step of assembling, the array is made of a flexible material	<p>"The wafer 100 may be composed of a wide range of material, either biological, nonbiological, organic, inorganic, or a combination of any of these, existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, slides, etc." P. 6, ll. 28-31.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO<sub>2</sub>, SiN<sub>4</sub>, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P.7, ll. 5-8.</p> <p>"Surfaces on the solid wafer will usually, though not always, be composed of the same material as the wafer. Thus, the surface may be composed of any of a wide variety of materials, for example, polymers, plastics, resins, polysaccharides, silica or silica-based materials, carbon, metals, inorganic glasses, membranes, or any of the above-listed wafer materials." P.7, ll. 12-16.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
having an adhesive on a surface that comprises the sets of chemical reactants, and the adhesive surface is contacted with the microtiter plate,	<p>"A substrate having an array of probes is attached to the cavity using, for example, an adhesive." P. 2, ll. 20-21.</p> <p>"According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P.19, ll. 28-29.</p> <p>"This configuration permits the adhesive to be dispensed onto the trough and provides adequate surface area for the adhesive to attach chip 120 to</p>



Claims Added	Disclosure in Applicant's Present Specification
	<p>the package." P. 12, ll. 9-11.</p> <p>"Ledge 1810, which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.</p> <p>"Preferably, the ledge is sufficiently large to accommodate an adhesive 1920 such as an adhesive film, adhesive layer, tape, or any other adhesive layer." P. 24, ll. 23-24.</p>
<p>and wherein the step of sealing comprises applying one or more of mechanical clamps, radiation, heat and vacuum to the reaction assembly for a period of time until the adhesive adheres the array to the plate.</p>	<p>"In some embodiments, clamp 2010 is acoustically welded to the body." P. 25, line 1.</p> <p>"Alternatively, screws, clips, adhesives or other attachment techniques may be used to mate clamp 2010 to the package." P. 25, ll. 2-4.</p> <p>"Heat staking includes applying heat and force at side 2111 of ridge, thus forcing ridge tightly against or around chip 120." P. 25, ll. 8-10.</p> <p>"Other techniques such as insert molding, wave soldering, surface diffusion, laser welding, shrink wrap, o-ring seal, surface etching, or heat staking from the top may also be employed." P. 25, ll. 18-20.</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P. 25, line 28 to P.26, line 2.</p> <p>The substrate and the body serve to seal the cavity except for an inlet port and an outlet port. The body and the substrate may be mated for sealing in some embodiments with one or more gaskets. According to a preferred embodiment, the body is provided with two concentric gaskets and the intervening space is held at vacuum to ensure mating of the substrate to the gaskets. U.S. Patent No. 5,143,854, col. 16, ll. 46-52 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p> <p>"According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P.19, ll. 28-29.</p> <p>"Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one</p>



Claims Added	Disclosure in Applicant's Present Specification
	embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.
145. The method of claim 144, wherein the adhesive is selected from an ultraviolet (UV) light curable adhesive that has increased adhesion with the application of UV light to the adhesive and a releasable adhesive.	<p>"Ledge 1810 [Fig.18], which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.</p> <p>"Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.</p> <p>"The mid section 2420 of the tape is comprised of non-permanent adhesive." P. 25, ll. 30-31.</p>
146. The method of claim 141, wherein the test sample wells are spatially arranged in a surface of the microtiter plate,	"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format... Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 11-15.
each well having a side wall adjacent to a closed end that together enclose the well except for an open end at the surface of the microtiter plate,	"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.
and wherein the array comprises an array substrate having the sets of chemical reactants bound to an ray [sic array] surface of the array substrate in an array pattern of features,	<p>"Methods and devices for packaging a substrate having an array of probes fabricated on its surface are disclosed." P. 2, ll. 18-19.</p> <p>"According to one aspect of the techniques described therein, a plurality of probe arrays are immobilized at known locations on a large substrate or wafer. FIG. 1a illustrates a wafer 100 on which numerous probe arrays 110 are fabricated." P. 6, ll. 25-28.</p>
the array pattern being similar to the spatial arrangement of test sample wells on the microtiter plate.	Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 14-15.
147. The method of claim 141, wherein in the step of mechanically agitating a	Cavity 310 may include inlets 350 and 360. Selected fluids are introduced into and out of the cavity via the inlets. In some embodiments, the inlets are located at opposite ends of the cavity. This configuration improves



Claims Added	Disclosure in Applicant's Present Specification
difference in mass densities between the test sample and gas filling any space between the test sample and the set of chemical reactants in each closed cell causes mixing of the test sample with the chemical reactants in each closed cell.	fluid circulation and regulation of bubble formation in the cavity. The bubbles agitate the fluid, increasing the hybridization rate between the targets and complementary probe sequences. In one embodiment, the inlets are located at the top and bottom end of the cavity when the package is oriented vertically such as at the opposite corners of the cavity. Locating the inlet at the highest and lowest positions in the cavity facilitates the removal of bubbles from the cavity. P. 10, ll. 17-24.
148. The method of claim 141, further comprising the step of analyzing reaction products in the closed cells after the step of mechanically agitating.	"Thereafter, the package may be aligned on a detection or imaging system, such as those disclosed in United States Patent Number 5,143,854 (Pirung et al.) or United States Patent Application Serial Number 08/495,889..., already incorporated herein by reference for all purposes. Such detection systems may take advantage of the package's asymmetry (i.e., non-flush edge) by employing a holder to match the shape of the package specifically. Thus, the package is assured of being properly oriented and aligned for scanning. The imaging systems are capable of qualitatively analyzing the reaction between the probes and targets. Based on this analysis, sequence information of the targets is extracted." P. 23, ll. 8-16.
149. The method of claim 148, wherein the array is optically transparent.	"In a preferred embodiment, the wafer is flat glass or single-crystal silicon." P. 7, ll. 10-11.
150. The method of claim 141, wherein the microtiter plate is a 96 well microtiter plate and the number of sets of chemical reactants on the array match the selected microtiter plate.	"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format... Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 11-15
151. The method of claim 141, wherein each set of chemical reactants is an array feature that comprises a subarray having the chemical reactants arranged in a subarray pattern of subfeatures, and wherein the chemical reactant is different in at least one feature or in at least one subfeature on the array.	<p>"The present inventions relate to the fabrication and placement of materials at known locations on a substrate. In particular, one embodiment of the invention provides a method and associated apparatus for packaging a substrate having diverse sequences at known locations on its surface." P. 1, ll. 14-17.</p> <p>"In one method of sequencing by hybridization, a sequences of diverse materials are formed at known locations on the surface of a substrate." P. 1, ll. 26-27.</p> <p>"By combining various available technologies, such as photolithography and fabrication techniques, substantial progress has been made in the fabrication and placement of diverse materials on a substrate. For</p>



Claims Added	Disclosure in Applicant's Present Specification
	<p>example, thousands of different sequences may be fabricated on a single substrate of about 1.28 cm<sup>2</sup> in only a small fraction of the time required by conventional methods.” P. 2, ll. 5-9.</p> <p>“The present invention provides economical and efficient packaging devices for a substrate having an array of probes fabricated thereon...According to one aspect of the techniques described therein, a plurality of probe arrays are immobilized at known locations on a large substrate or wafer.” P. 6, ll. 20-26.</p>
152. The method of claim 141, wherein the test sample is different in at least one well of the microtiter plate.	“In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format... This format provides significant increased throughput by enabling parallel testing of a plurality of samples.” P. 27, ll. 11-17.
153. A method of simultaneously conducting multiple chemical reactions between a first chemical sample and a second chemical sample comprising the steps of:	<p>“In one method of sequencing by hybridization, a sequences of diverse materials are formed at known locations on the surface of a substrate.” P. 1, ll. 26-27.</p> <p>“In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format... This format provides significant increased throughput by enabling parallel testing of a plurality of samples.” P. 27, ll. 11-17.</p>
providing a plate having a plurality of wells spatially arranged in a surface of the plate in a well array pattern,	“ In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples.” P. 27, ll. 11-17.
each well having a side wall adjacent to a closed end that enclose the well except for an open end that is opposite the closed end and that is adjacent to the plate surface, the plurality of wells for receiving the first chemical sample via the open end;	“In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples.” P. 27, ll. 11-17.
providing an array of the second chemical sample, the	“In particular, one embodiment of the invention provides a method and associated apparatus for packaging a substrate having diverse sequences at



Claims Added	Disclosure in Applicant's Present Specification
array comprising sets of the second chemical sample bound to	<p>known locations on its surface." P.1, ll. 15-17.</p> <p>"A probe is a surface-immobilized molecule..." P.5, line 31.</p> <p>"The present invention provides economical and efficient packaging devices for a substrate having an array of probes fabricated thereon. The probe arrays may be fabricated according to the pioneering techniques...According to one aspect of the techniques described therein, a plurality of probe arrays are immobilized at known locations on a large substrate or wafer." P. 6, ll. 20-26</p>
and spatially arranged on a surface of an array substrate in an array pattern of features, the well array pattern being spatially similar to the feature array pattern;	<p>"Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 14-15.</p>
assembling the array onto the plate to form a sealed reaction assembly,	<p>"Optionally, a gasket or a seal 2070 is located between the ledge and chip to ensure a tight seal around cavity 310." P. 24, ll. 30-31.</p> <p>"In some embodiments, a chip is mounted individually to each cavity according to methods described above." P. 27, ll. 12-14.</p>
such that the surface of the array faces the surface of the plate	<p>"Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 14-15.</p>
and encloses the open ends of the plurality of wells to form closed cells, each closed cell comprising the first chemical sample and a respective set of the second chemical sample features,	<p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p> <p>"Methods and devices for packaging a substrate having an array of probes fabricated on its surface are disclosed." P. 2, ll. 18-19.</p> <p>"A target is a molecule that has an affinity for a given probe and is sometimes referred to as a receptor." P. 6, ll. 4-5.</p> <p>"A probe is a surface-immobilized molecule that is recognized by a</p>



Claims Added	Disclosure in Applicant's Present Specification
<p>wherein the sealed reaction assembly is one or more of gas tight, liquid tight, and fluid tight;</p>	<p>particular target and is sometimes referred to as a ligand." P. 5, ll. 31-32.</p> <p>"Optionally, a gasket or a seal 2070 is located between the ledge and chip to ensure a tight seal around cavity 310." P. 24, ll. 30-31.</p> <p>"In some embodiments, a gasket or seal 2270 is placed at the bottom of the notch to ensure a tight seal when the chip is attached. Once the chip is located at the notch, a V-shaped wedge 2260 is inserted into channel 2250. The wedge forces the body to press against chip's edges and seal 2260, thus mating the chip to the package." P. 25, ll. 13-17.</p> <p>"FIG. 23 shows an alternative embodiment of package that employs check valves to seal the inlets. As shown, depressions 2305 and 2315 communicate with cavity 310 through inlets 350 and 360... To introduce a fluid into the cavity, a needle is inserted into the check valve. When the needle is removed, the check valve reseals itself to prevent leakage of the fluid." P.25, ll. 22-27</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P.25, line 28 to P.26, line 2.</p> <p>"FIG. 26a illustrates a package utilizing sliding seals for retaining fluids within the cavity. The seals are positioned in slots 2610 that are located above the inlets... The inlet is sealed or unsealed by positioning the seal appropriately along the slot. Alternatively, spring loaded balls, rotary ball valves, plug valves, or other fluid retention techniques may be employed." P.26, ll. 9-17.</p>
<p>and contacting the first chemical sample with the second chemical sample in each closed cell of the sealed reaction assembly.</p>	<p>Inlets 2750 and 2751 are provided and communicate with cavity 2710. Selected fluids are circulated through the cavity via inlets 2750 and 2751. To seal the fluids in the cavity, a septum, plug or other seal may be employed. In alternative embodiments, any of the fluid retention techniques described herein may be utilized." P. 27, lines 6-9</p> <p>"Upon completion, the chip package will have a variety of uses. For example, the chip package will be useful in sequencing genetic material by hybridization. In sequencing by hybridization, the chip package is mounted on a hybridization station where it is connected to a fluid delivery system. Such system is connected to the package by inserting needles into the ports and puncturing the septums therein. In this manner, various fluids are introduced into the cavity for contacting the probes during the hybridization process." P. 22, lines 19-24.</p>



Claims Added	Disclosure in Applicant's Present Specification
154. The method of claim 153, wherein the array substrate is made of a flexible material,	<p>"The wafer 100 may be composed of a wide range of material, either biological, nonbiological, organic, inorganic, or a combination of any of these, existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, slides, etc." P. 6, ll. 28-31.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO<sub>2</sub>, SiN<sub>4</sub>, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P.7, ll. 5-8.</p> <p>"Surfaces on the solid wafer will usually, though not always, be composed of the same material as the wafer. Thus, the surface may be composed of any of a wide variety of materials, for example, polymers, plastics, resins, polysaccharides, silica or silica-based materials, carbon, metals, inorganic glasses, membranes, or any of the above-listed wafer materials." P.7, ll. 12-16.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
and wherein in the step of assembling, the array substrate is contacted with the plate using one or more of mechanical clamps, radiation, heat, vacuum and an adhesive to seal the reaction assembly.	<p>"In some embodiments, clamp 2010 is acoustically welded to the body." P.25, line 1.</p> <p>"Alternatively, screws, clips, adhesives or other attachment techniques may be used to mate clamp 2010 to the package." P. 25, ll. 2-4.</p> <p>"According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P.19, ll. 28-29.</p> <p>"Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.</p> <p>"Heat staking includes applying heat and force at side 211 of ridge, thus forcing ridge tightly against or around chip 120." P. 25, ll. 8-10.</p> <p>"Other techniques such as insert molding, wave soldering, surface diffusion, laser welding, shrink wrap, o-ring seal, surface etching, or heat</p>



Claims Added	Disclosure in Applicant's Present Specification
	<p>staking from the top may also be employed." P. 25, ll. 18-20.</p> <p>The substrate and the body serve to seal the cavity except for an inlet port and an outlet port. The body and the substrate may be mated for sealing in some embodiments with one or more gaskets. According to a preferred embodiment, the body is provided with two concentric gaskets and the intervening space is held at vacuum to ensure mating of the substrate to the gaskets. U.S. Patent No. 5,143,854, col. 16, ll. 46-52 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P.25, line 28 to P.26, line 2.</p>
<p>155. The method of claim 153, wherein the array substrate is made of an optically transparent flexible film</p>	<p>"In a preferred embodiment, the wafer is flat galss or single-crystal silicon." P. 7, ll. 10-11.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO<sub>2</sub>, SiN<sub>4</sub>, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P. 7, ll. 5-8.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
<p>having an adhesive on the surface to which the second chemical samples are bound, the adhesive surrounding the features, and wherein in the step of assembling, the adhesive is contacted with the plate surface to seal the reaction assembly.</p>	<p>"A substrate having an array of probes is attached to the cavity using, for example, an adhesive." P. 2, ll. 20-21.</p> <p>"This configuration permits the adhesive to be dispensed onto the trough and provides adequate surface area for the adhesive to attach chip 120 to the package." P. 12, ll. 9-11.</p> <p>"Ledge 1810, which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.</p> <p>"Preferably, the ledge is sufficiently large to accommodate an adhesive 1920 such as an adhesive film, adhesive layer, tape, or any other adhesive layer." P. 24, ll. 23-24.</p>
<p>156. The method of claim 154, wherein the flexible</p>	<p>"The wafer 100 may be composed of a wide range of material, either biological, nonbiological, organic, inorganic, or a combination of any of</p>



Claims Added	Disclosure in Applicant's Present Specification
array substrate further comprises	these, existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, slides, etc." P. 6, ll. 28-31. "Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).
the adhesive on the surface to which the second chemical samples are bound,	"A substrate having an array of probes is attached to the cavity using, for example, an adhesive." P. 2, ll. 20-21.  "According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P. 19, ll. 28-29.
and wherein in the step of assembling, the adhesive surface of the array is contacted with the plate surface,	"This configuration permits the adhesive to be dispensed onto the trough and provides adequate surface area for the adhesive to attach chip 120 to the package." P. 12, ll. 9-11.  "Ledge 1810, which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P.24, ll. 18-20.  "Preferably, the ledge is sufficiently large to accommodate an adhesive 1920 such as an adhesive film, adhesive layer, tape, or any other adhesive layer." P. 24, ll. 23-24.
and the reaction assembly is sealed using one or more of heat, radiation, and pressure.	"Heat staking includes applying heat and force at side 2111 of ridge, thus forcing ridge tightly against or around chip 120." P. 25, ll. 8-10.  "Other techniques such as insert molding, wave soldering, surface diffusion, laser welding, shrink wrap, o-ring seal, surface etching, or heat staking from the top may also be employed." P. 25, ll. 18-20.  "According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P.19, ll. 28-29.  "Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.  "In some embodiments, clamp 2010 is acoustically welded to the body." P. 25, line 1.  "Alternatively, screws, clips, adhesives or other attachment techniques



Claims Added	Disclosure in Applicant's Present Specification
	may be used to mate clamp 2010 to the package." P. 25, ll. 2-4.
157. The method of claim 156, wherein the adhesive is selected from a releasable adhesive	"The mid section 2420 of the tape is comprised of non-permanent adhesive." P. 25, ll. 30-31.
and an ultraviolet light (UV) curable adhesive, such that adhesion is increased with the application of UV light to the adhesive.	<p>"Ledge 1810 [Fig.18], which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.</p> <p>"Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.</p>
158. The method of claim 153, wherein the step of contacting comprises one or more of mechanically agitating the reaction assembly,	<p>"Optionally, the fluid delivery system includes an agitator to improve mixing the cavity,..." P. 23, l. 4.</p> <p>"Fig. 29 illustrates an alternative embodiment of the agitation system. System 2900 includes a vortexer 2910 on which the chip package 300 is mounted." P. 28, ll. 27-28.</p> <p>"...the vortexer is activated to vibrate the chip package, similar to a paint mixer. In some embodiments, the vortexer may vibrate the package at about 3000 cycles per minutes. The motion mixes the targets in the fluid, shortening the incubation period." P. 29, ll. 13-15.</p> <p>"The bubbles agitate the fluid, increasing the hybridization rate between the targets and complementary probe sequences." P. 10, ll. 20-21.</p>
controlling the reaction temperature of the reaction assembly,	"A seal is provided for each inlet to retain the fluid within the cavity. An opening is formed below the cavity to receive a temperature controller for controlling the temperature in the cavity. By forming a sealed thermostatically controlled chamber in which fluids can easily be introduced, a practical medium for sequencing by hybridization is provided." P. 2, ll. 22-25.
directing radiation into the assembly, and	"A buffer or other fluid may be introduced into the cavity. For example, the cavity may be filled with a buffer by opening valves 3601, 3621, and 3622. This injects N <sub>2</sub> into container 3620 which forces the buffer therein to flow through the system until it fills cavity 310. In the alternative, ultrasonic radiation, heat, magnetic beads, or other agitation techniques may be employed." P. 31, ll. 5-9.
inverting the reaction	"When the cavity is filled, valves 2935, 2936, and 2955 are closed to seal



Claims Added	Disclosure in Applicant's Present Specification
assembly to cause mixing between the first chemical sample and the second chemical sample.	the fluid in the cavity. Next, the vortexer is activated to vibrate the chip package, similar to a paint mixer. In some embodiments, the vortexer may vibrate the package at about 3000 cycles per minutes. The motion mixes the targets in the fluid, shortening the incubation period. In some embodiments, the vortexer rotates the chip package until hybridization is completed." P. 29, ll. 12-16.
159. An apparatus for simultaneously conducting multiple chemical reactions comprising:	<p>"The present inventions relate to the fabrication and placement of materials at known locations on a substrate." P. 1, ll. 14-15.</p> <p>"In particular, the method comprises the steps of first forming a plurality of probe arrays on a substrate and separating the substrate into a plurality of chips. Typically, each chip contains at least one probe array. A chip is then mated to a package having a reaction chamber with fluid inlets. When mated, the probe array is in fluid communication with the reaction chamber." P. 3, ll. 2-6.</p> <p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p>
a plate having a plurality of wells spatially arranged in a surface of the plate in a well array pattern, each well having a side wall adjacent to a closed end that enclose the well except for an open end that is opposite the closed end and that is adjacent to the plate surface, the plurality of wells for receiving a test sample via the open end;	<p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p>
an array of sets of chemical reactants, the sets of chemical reactants being bound to and spatially arranged on a surface of an	<p>"Methods and devices for packaging a substrate having an array of probes fabricated on its surface are disclosed." P. 2, ll. 18-19.</p> <p>"According to one aspect of the techniques described therein, a plurality of probe arrays are immobilized at known locations on a large substrate or</p>



Claims Added	Disclosure in Applicant's Present Specification
array substrate in an array pattern of features,	wafer. FIG. 1a illustrates a wafer 100 on which numerous probe arrays 110 are fabricated." P. 6, ll. 25-28.
the well array pattern being spatially similar to the feature array pattern,	"The cavities, for example, may be in a 96-well micro-titre format...Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 12-15.
wherein the array surface faces the plate surface and covers the open ends of the wells to form closed cells, each closed cell comprising a respective test sample and a respective set of the chemical reactants; and	<p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p> <p>"In particular, one embodiment of the invention provides a method and associated apparatus for packaging a substrate having diverse sequences at known locations on its surface." P.1, ll. 15-17.</p> <p>"A probe is a surface-immobilized molecule..." P.5, line 31.</p>
a seal between the plate and the array that is one or more of gas tight, liquid tight, and fluid tight.	<p>"Optionally, a gasket or a seal 2070 is located between the ledge and chip to ensure a tight seal around cavity 310." P. 24, ll. 30-31.</p> <p>"In some embodiments, a gasket or seal 2270 is placed at the bottom of the notch to ensure a tight seal when the chip is attached. Once the chip is located at the notch, a V-shaped wedge 2260 is inserted into channel 2250. The wedge forces the body to press against chip's edges and seal 2260, thus mating the chip to the package." P. 25, ll. 13-17.</p> <p>"FIG. 23 shows an alternative embodiment of package that employs check valves to seal the inlets. As shown, depressions 2305 and 2315 communicate with cavity 310 through inlets 350 and 360... To introduce a fluid into the cavity, a needle is inserted into the check valve. When the needle is removed, the check valve reseals itself to prevent leakage of the fluid." P. 25, ll. 22-27</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P. 25, line 28 to P.26, line 2.</p> <p>"FIG. 26a illustrates a package utilizing sliding seals for retaining fluids</p>



Claims Added	Disclosure in Applicant's Present Specification
	<p>within the cavity. The seals are positioned in slots 2610 that are located above the inlets... The inlet is sealed or unsealed by positioning the seal appropriately along the slot. Alternatively, spring loaded balls, rotary ball valves, plug valves, or other fluid retention techniques may be employed." P. 26, ll. 9-17.</p>
<p>160. The apparatus of claim 159, wherein the seal comprises the array substrate being made of a flexible material</p>	<p>"The wafer 100 may be composed of a wide range of material, either biological, nonbiological, organic, inorganic, or a combination of any of these, existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, slides, etc." P. 6, ll. 28-31.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO<sub>2</sub>, SiN<sub>4</sub>, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P.7, ll. 5-8.</p> <p>"Surfaces on the solid wafer will usually, though not always, be composed of the same material as the wafer. Thus, the surface may be composed of any of a wide variety of materials, for example, polymers, plastics, resins, polysaccharides, silica or silica-based materials, carbon, metals, inorganic glasses, membranes, or any of the above-listed wafer materials." P.7, ll. 12-16.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
<p>and one or more of mechanical clamps, radiation, heat, vacuum and an adhesive.</p>	<p>"In some embodiments, clamp 2010 is acoustically welded to the body." P.25, line 1.</p> <p>"Alternatively, screws, clips, adhesives or other attachment techniques may be used to mate clamp 2010 to the package." P. 25, ll. 2-4.</p> <p>"According to some embodiments, an ultraviolet cured adhesive attaches the chip to the package." P.19, ll. 28-29.</p> <p>"Once the adhesive is deposited, the system reexamines the chip to determine if the adhesive had moved the chip out of position. If the chip is still aligned, the head unit locates the ultraviolet light above the adhesive and cures it for a time sufficient to harden the adhesive, which in one embodiment is about 10 seconds. Otherwise, the chip is realigned." P. 22, ll. 14-18.</p>



Claims Added	Disclosure in Applicant's Present Specification
	<p>"Heat staking includes applying heat and force at side 211 of ridge, thus forcing ridge tightly against or around chip 120." P. 25, ll. 8-10.</p> <p>"Other techniques such as insert molding, wave soldering, surface diffusion, laser welding, shrink wrap, o-ring seal, surface etching, or heat staking from the top may also be employed." P. 25, ll. 18-20.</p> <p>The substrate and the body serve to seal the cavity except for an inlet port and an outlet port. The body and the substrate may be mated for sealing in some embodiments with one or more gaskets. According to a preferred embodiment, the body is provided with two concentric gaskets and the intervening space is held at vacuum to ensure mating of the substrate to the gaskets. U.S. Patent No. 5,143,854, col. 16, ll. 46-52 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P. 25, line 28 to P.26, line 2.</p>
161. The apparatus of claim 159, wherein the seal comprises the array substrate being made of an optically transparent flexible film having	<p>"In a preferred embodiment, the wafer is flat glass or single-crystal silicon." P. 7, ll. 10-11.</p> <p>"For instance, the wafer may be a polymerized Langmuir Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO<sub>2</sub>, SiN<sub>4</sub>, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof." P.7, ll. 5-8.</p> <p>"Substrate: A material having a rigid or semi-rigid surface." U.S. Patent No. 5,143,854, col. 7, ll. 49-50 (Incorporated by reference at P. 1, ll. 20 of the '678 application.).</p>
an adhesive that surrounds the features on the array surface, the adhesive being contacted with the plate surface.	<p>"A substrate having an array of probes is attached to the cavity using, for example, an adhesive." P. 2, ll. 20-21.</p> <p>"This configuration permits the adhesive to be dispensed onto the trough and provides adequate surface area for the adhesive to attach chip 120 to the package." P. 12, ll. 9-11.</p> <p>"Ledge 1810, which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.</p>



Claims Added	Disclosure in Applicant's Present Specification
	"Preferably, the ledge is sufficiently large to accommodate an adhesive 1920 such as an adhesive film, adhesive layer, tape, or any other adhesive layer." P. 24, ll. 23-24.
162. The apparatus of claim 159, wherein the seal comprises using an adhesive selected from a releasable adhesive	"The mid section 2420 of the tape is comprised of non-permanent adhesive." P. 25, ll. 30-31.
and an ultraviolet light curable adhesive, such that adhesion is increased with the application of ultraviolet light to the adhesive.	"Ledge 1810 [Fig.18], which extends chip 120, receives an adhesive 1860 such as ultraviolet cured silicone, cement, or other adhesive for attaching the chip thereto." P. 24, ll. 18-20.
163. A kit for simultaneously conducting multiple different assays of biological materials comprising:	"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format. In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.
an array having a plurality of sets of chemical reactants spatially arranged on an array substrate; and	<p>"Methods and devices for packaging a substrate having an array of probes fabricated on its surface are disclosed." P. 2, ll. 18-19.</p> <p>"A target is a molecule that has an affinity for a given probe and is sometimes referred to as a receptor." P. 6, ll. 4-5.</p> <p>"A probe is a surface-immobilized molecule that is recognized by a particular target and is sometimes referred to as a ligand." P. 5, ll. 31-32.</p> <p>"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format... Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 11-15.</p>
a plate having a plurality of spatially arranged wells in the plate, the wells being closed at one end and open at an opposite end for receiving a sample under test,	"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format... Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities." P. 27, ll. 11-15.
wherein the array and the plate form a multiple closed	"In an alternative embodiment, the body is configured with a plurality of cavities. The cavities, for example, may be in a 96-well micro-titre format.



Claims Added	Disclosure in Applicant's Present Specification
<p>cell reaction assembly when the array is assembled to the plate, such that the array covers the open ends of the wells to form closed cells, each closed cell comprising the test sample and a respective set of the chemical reactants,</p>	<p>In some embodiments, a chip is mounted individually to each cavity according to the methods described above. Alternatively, the probe arrays may be formed on the wafer in a format matching that of the cavities. Accordingly, separating the wafer is not necessary before attaching the probe arrays to the package. This format provides significant increased throughput by enabling parallel testing of a plurality of samples." P. 27, ll. 11-17.</p> <p>"Methods and devices for packaging a substrate having an array of probes fabricated on its surface are disclosed." P. 2, ll. 18-19.</p> <p>"A target is a molecule that has an affinity for a given probe and is sometimes referred to as a receptor." P. 6, ll. 4-5.</p> <p>"A probe is a surface-immobilized molecule that is recognized by a particular target and is sometimes referred to as a ligand." P. 5, ll. 31-32.</p>
<p>the reaction assembly comprising a seal between the plate and the array that is one or more of gas tight, liquid tight, and fluid tight when assembled.</p>	<p>"Optionally, a gasket or a seal 2070 is located between the ledge and chip to ensure a tight seal around cavity 310." P. 24, ll. 30-31.</p> <p>"In some embodiments, a gasket or seal 2270 is placed at the bottom of the notch to ensure a tight seal when the chip is attached. Once the chip is located at the notch, a V-shaped wedge 2260 is inserted into channel 2250. The wedge forces the body to press against chip's edges and seal 2260, thus mating the chip to the package." P. 25, ll. 13-17.</p> <p>"FIG. 23 shows an alternative embodiment of package that employs check valves to seal the inlets. As shown, depressions 2305 and 2315 communicate with cavity 310 through inlets 350 and 360... To introduce a fluid into the cavity, a needle is inserted into the check valve. When the needle is removed, the check valve reseals itself to prevent leakage of the fluid." P. 25, ll. 22-27</p> <p>"FIG. 24 illustrates another package that uses reusable tape for sealing the cavity 310... The mid section 2420 of the tape is comprised of non-permanent adhesive. This design allows inlets to be conveniently sealed or unsealed without completely separating the tape from the package." P. 25, line 28 to P.26, line 2.</p> <p>"FIG. 26a illustrates a package utilizing sliding seals for retaining fluids within the cavity. The seals are positioned in slots 2610 that are located above the inlets... The inlet is sealed or unsealed by positioning the seal appropriately along the slot. Alternatively, spring loaded balls, rotary ball valves, plug valves, or other fluid retention techniques may be employed."</p>



Claims Added	Disclosure in Applicant's Present Specification
	P. 26, ll. 9-17.